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ABSTRACT

This monograph attempts to approach educational program evaluation from a total program approach rather than from the level of student achievement. Although intended for use in pupil personnel areas, it also has applicability in other areas. It begins with definitions of program evaluation, including formative and summative evaluation. The step-by-step procedure for conducting an educational needs assessment is explained. One chapter deals with establishing performance objectives. Planning the evaluation program and monitoring progress are explained. Steps for collecting data for a formative evaluation are outlined as are steps and instrumentation for conducting a summative evaluation. (Author/JM)

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Pupil Personnel Services Guidelines for Program Evaluation

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PUPIL PERSONNEL SERVICES
GUIDELINES FOR PROGRAM EVALUATION

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National Association of Pupil Personnel Administrators

1977

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INTRODUCTION

The increased pressures for more accountability have made it apparent that the public schools no longer serve one public or have one conception of the public good. In every age the style of schooling is set by the success routes of that age.

The attempts to satisfy the demands for accountability have demonstrated that without broad consensus on the meaning of quality in education; without some agreement on needs common to all children; without some agreement on what belongs to the province of the school and what does not, accountability means little more than bookkeeping, legal correctness, or "passing the buck." Indeed, if the accountability push has not achieved its reform goal, or even its punitive one, it is not because school people are irresponsible, but rather because they are far from clear as to what response would satisfy the diverse demands of the various constituencies and their varied criteria of quality.

In this time of competition for public funds and public accountability, pupil personnel services must be able to verify its contribution to the total educational enterprise. It is vital for the pupil personnel administrator to be able to demonstrate objectively that the services performed within the scope of pupil services is an essential component of education. Although this monograph, **Program Evaluation for Pupil Services** is intended for application in pupil personnel areas, it also has applicability beyond those confines. This Monograph provides an objective, reliable, and valid view of the importance of program evaluation of pupil services to the educational manager.

Special acknowledgments of appreciation are in order to Dr. Gordon E. Footman, Director, Division of Program Evaluation, Research and Pupil Services, Office of the Los Angeles Superintendent of Schools, California, who was the chairman for this publication. Dr. Footman is currently the Editor of Publications for Association monographs.

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In addition, recognition must be made of the work of the staff of the Office of the Los Angeles County Superintendent of Schools and their publication **Educational Program Evaluation Assistance Handbook.** The combined efforts of those involved made this monograph possible.

Sam Mikaelian,
President, 1977

WHAT IS PROGRAM EVALUATION?

Alternative Modes Traditional evaluation in the schools has usually consisted of the administering of a standardized test for the purpose of assessing student achievement. With nothing but test results, a program supervisor was hard pressed to answer questions like the following about his or her program:

- Are the goals of the program clearly defined and worthy of pursuit?
- Are the program objectives linked to the stated program goals?
- Have appropriate strategies been developed for reaching the program objectives?
- Are these strategies known to and accepted by all personnel who are expected to carry them out?
- To what degree has the program been implemented in the schools?
- If results are not satisfactory, is it because:
  - the goals and objectives of the program are vague?
  - strategies for reaching the objectives need to be improved?
  - strategies have never been implemented?
  - well thought-out strategies have been implemented but are being poorly carried out?
  - or a combination of these?

While educational program evaluation is a relatively new concept in educational circles, a variety of models of evaluation have been developed and a number have reached the level of practical use. This Monograph attempts to approach educational program evaluation from a total program approach rather than from the level of pupil achievement. Pupil achievement will continue to be a part in the concept of educational evaluation, but it is only a part of a process of educational program evaluation.

A Working Definition Historically, L.J. Cronback in 1963 provided a comprehensive definition of educational evaluation when he stated that evaluation is "the collection and use of information to make decisions about an educational program." Leading models relevant to the approach are used in this Monograph. These include Daniel Stufflebeam's CIPP Model (Context, Input, Process, and Product), Malcom Provus' Discrepancy Model, and the Fortune/ Hutchinson evalution model. The reader is referred to the *Handbook in Research and Evaluation* (Isaac and Michael) (1974) and *Educational Evaluation* (Popham) (1972) for an explanation of these alternative models.

Two other relevant models are Robert Stakes's Countenance Model and Michael Scriven's Goal Free Model. Both of these latter models demand a high degree of judgment on the part of the evaluator. (Worthen, 1973).

Cronback's definition of evaluation will be slightly expanded in this Monograph. Evaluation is defined as a process of determining the value and effectiveness of something for the purpose of decision making. The significant terms in this definition are:

Value
Effectiveness
Decision Making

Value The decision maker is concerned with determining the value of something and permits a decision to be made regarding the relative values of alternatives.

Effectiveness The decision maker must know to what degree a particular process was effective in meeting identified needs. Effectiveness is not synonymous with efficiency.

Decision Making It is necessary that the decision maker have information of value and effectiveness that will be useful to him or her. Therefore, evaluation is a key tool to decision making.

Formative and Summative Evaluation There are two basic types of evaluation with which educators are concerned. These are formative evaluation and summative evaluation. Formative evaluation is concerned with implementation processes and learner progress toward attainment of objectives. Formative evaluation provides information during the course of the program for possible mid-process correction. Summative evaluation is usually concerned with evidenced results, especially in learner achievement. It measures a degree of success of operational procedures and takes place at the end of the program.

Formative and summative evaluation may include product, process, and context data. The words product, process, and context refer to the type of information collected. All three types of information may be collected during the program or at the end of the program period.

Product Data

Product data focus on the outcomes, results, or products, in order to measure and interpret accomplishments during the program and at the end of the program. Product data should be related to established program goals and

objectives for information to be useful; e.g., a summative evaluation of a pilot career guidance program, grades 11-12, with the goal of developing job interview skills for students, might show that the performance objectives were met in that students had indeed developed and demonstrated job interview skills. It could be concluded, then, that the program is already to be expanded to all 11th and 12th grade students in the school district.

Process Data Process data focus on activities applied to supporting the achievement of the desired outcomes in order to provide information that will determine the effectiveness of the activities and procedures of a program. Collecting process data enables the project manager to monitor an activity or program and to identify and/or predict procedural difficulties for decision makers; e.g., early in the school year, the decision maker may wish to know whether the teachers and aides are implementing the instructional activities as agreed. This is referred to as formative process evaluation. Summative process data may also be gathered at the same time as product and context data to provide interested parties with a global end-of-the-year view.

Context Data Context data focus on the environment in which the activities take place; e.g., this might include facilities, policies, class organization, teacher skills, attitude, and support of the principal toward the program in the school.

Context data are useful in making decisions in determining program objectives and in identifying those variables that may keep the program from meeting its performance objectives; e.g., a school principal who will not support a special program imposed on his school would be a serious threat to the success of the program.

There are five components in conducting an educational program evaluation. These include: Conducting an Educational Needs Assessment, Establishing Performance Objectives, Planning the Program, Monitoring Progress, Conducting Formative Evaluation, and Conducting Summative Evaluation. They are necessary elements in sound evaluation programs.

CONDUCTING AN EDUCATIONAL NEEDS ASSESSMENT

The purpose of a needs assessment is to determine what is the current status of the program, what is the desired status, and what discrepancies exist between those two situations. Needs assessments are often and unfortunately neglected by educators who are responsible for structuring programs. The following processes are helpful in taking the first step in the process of educational evaluation.

Processes

Identify the target group
Determining the existing condition
Determining the desired condition
Stating the discrepancies
Identifying goals
Prioritizing goals

The end product of these processes is helpful in formulating an educational program which is capable of being evaluated.

Identifying the Target Population The goals assessment process should partially answer the question, "For whom is an educational program to be designed?" The target group may be expanded or contracted as the "desired condition" is determined. It is essential, however, that the target group for a program be carefully defined early in the planning process. Data should be gathered about the target group in a carefully planned way and is helpful in determining priorities among various identified needs. However, care must be taken that such data gathering does not lead to preconceived outcomes.

Determining the Existing Condition Verify whether a program exists. A program is defined as a time-phased and funded plan allocating resources and specifying successive steps to support goals and achieve stated objectives. If a program does exist, evaluate results and determine whether the plan is producing the desired effects.

Determining the Desired Condition Write down the desired results and develop a plan for achieving those results. This is accomplished in a sequential way through using the processes described below.

Stating the Discrepancies A written statement of the discrepancies which exist between the existing and desired condition brings into focus the specifics the decision maker needs in order to identify the specific goals to be accomplished.

Identifying Goals Goals are courses of action and are most commonly stated by using the infinitive form of a verb and a noun; e.g., to build self-esteem is a goal. Goals answer the question: What is to be done? Objectives answer the questions: How is it to be done? By whom? When? Measured by what? And where will the evidence be located? A goal may be viewed as being somewhat philosophical in nature and is a starting place for building objectives. After as many goals as seem appropriate have been identified, the evaluation or prioritization of those goals follows.

Prioritizing Goals After stating the goals, a form may be developed for obtaining reactions to them from interested persons involved in seeing a target group realize these goals. The following shows a sample form of this type:

XYZ SCHOOL DISTRICT

EVALUATION OF COUNSELING SERVICES

Counselors Do This:				Counselors Should Do This:		
Never	Some times	Always	Descriptor	Never	Some times	Always
			1. To provide drug counseling 2. To organize Psychodramas 3. To administer the testing program 4. To attempt to clarify students' values 5. To interview truants and their parents			

Needs can be rank-ordered by observing the relative size of the discrepancies reported between the existing conditions of an educational program and the desired conditions.

In summary, educational needs assessment:

1. Answers the questions, "What is the existing condition?" and "What is the desired condition?" in the terms of an educational program.
2. Prioritizes the needs identified by such answers.

ESTABLISHING PERFORMANCE OBJECTIVES

Unless objectives are measurable, it is not possible to determine whether the program is achieving its goals. "If you don't know where you are going, then any path will take you there" said the Chesire Cat to Alice in Alice in Wonderland. The more obscure the definition of ends, the more difficult the design, development, validation, and evaluation of the series of activities. The more specific the end to be obtained, the greater the ease to generate sequential and logical steps.

Differentiating Between Goals and Objectives Goals and objectives are not the same in that a goal is usually a general statement of the long-term desired results once the program has been completed; an objective, however, contains an explicit specification of the result expected. When an outcome is stated as an objective, little doubt is left as to whether or not the objective has been attained.

The differences between the two include:

GOALS	OBJECTIVES
Broad in scope	Delimit an Intent
General Statements of end	Define specific outcome in measurable terms
Long-term or far-reaching	Accomplish within a specified time frame

Components of a Performance Objective The well-written objective communicates the same outcome to all readers. The performance objective includes components which answer the questions, "Who?" "Does or learns what?" "When?" "Under what conditions?" "At what minimum level of acceptance?" and "How will it be measured?"

"Who" relates to the person to perform an activity; e.g., 9th-grade counselees.

"Does or Learns What" is that which is to be known or done; e.g., participate in group counseling.

"When" relates to a specific time when something will have been accomplished; e.g., between March 1 and May 30.

"Under What Conditions" relates to the program or activity; e.g., guidance center, one hour weekly, by a trained group leader, etc.

"At What Minimum Level of Acceptance" relates to the minimum to be achieved; e.g., one standard deviation above the previous score or from the mean.

"How Will it be Measured" relates to assessment techniques; e.g., Likert-type scale of self-esteem.

The measurable objective could be stated as: 9th-grade counselees participating in group counseling between March 1 and May 30 in the Guidance Center program on a one-hour weekly basis by a trained group leader will show one standard deviation of improvement on a Likert-type scale of self-esteem. By assuring that all required components are included in the objectives written for the program, it will be possible to communicate the same outcome to all persons involved.

Classification of Objectives

It is useful to classify objectives into three domains.
Cognitive
Affective
Psychomotor

Objectives have been classified in this manner to insure:

..That the three dimensions of personal development are addressed by the educational program;
..that the educational program is applicable to the readiness of the learner and to facilitate development of a wide range of physical skills and cognitive processes as well as encouraging personal, social, and emotional growth; and
..that instrumentation to measure learner attainments is consistent with the prescribed objectives.

There are interrelationships among the three behavioral domains which are sometimes ignored due to the classification of objectives, and, therefore, it is suggested that the classification be used with caution.

Defining Objectives

Rationale for Product Objectives We educators have become reasonably astute in defining and clarifying our anticipated outcomes (product objectives), but we remain rather ineffectual in thoroughly describing how we are going to get there. Educators are forced to move from conceptualizing around some theoretical framework to facing the need to organize around the practical constraints of the everyday world. In order to measure outcomes, standards of performance need to exist.

Rationale for Process Objectives In describing how we are going to get there, we need to describe a program in terms of process objectives, often referred to as operational standards or process guidelines. Generally, these standards are referred to as product objectives. A standard needs to exist to determine the extent to which a program is operating according to plan. If there is no clearly defined plan, it is not possible to know the extent to which intended operation is occurring. To obtain greatest output, one needs maximum input.

Relationship of Process to Product Objectives Each set of process objectives or guidelines is related to a product objective. "This is what we are doing"..."in order to get here."

The Nature of Process Objectives Developing process objectives occurs simultaneously with planning the program. A set of process objectives describes what should be happening in all areas of the program, is specific enough to allow an observer to determine the extent to which each objective is met, and in total, represents the formal program plan. The planners have option as to how extensive the plan should be; however, the more extensive it is, the more complete is the planning.

Writing process objectives has often been done independently of actual program planning and is seen as simply a requirement to secure funding. Failure of process objectives to support the project plan significantly reduces the potential contribution of any process evaluation.

Process objectives require that each activity be described by stating:
Who has the responsibility?
What specifically will occur? and
By when?

PLANNING THE PROGRAM AND MONITORING PROGRESS

A program's success if often predicated on the extent and quality of the activities conducted prior to actual implementation, such as needs assessment, objective development, program planning, and development of an evaluation design. Information obtained from an evaluator during these three phases of the program is important. Maximum benefit to learners, as shown by product objective attainment, cannot be expected unless:

- the program was implemented according to plan;
- materials were obtained and used in a prescribed way;
- the roles and responsibilities of various staff were fulfilled;
- the activities planned were carried out in a timely manner;
- the communication network among staff was sound and operational.

Failure to become operational, no matter what the reason, can spell early defeat for a program, though it may have been beautifully conceptualized on paper.

Equally important in assessing the adequacy of implementation is knowing before the project ends the extent that product or outcome objectives are being met. Should exposure to a certain number of occupational clusters by the end of the year be a product objective, it would be a good idea to take a look in November or January, for example, to see how things are going. Adjustments in emphasis may be called for if students have come only one-third of the way by January.

These two phases of evaluation, process, and product, are often referred to as formative evaluation when conducted while the program is in operation.

Examples of Program Plans The program plan is the document which provides a base for the process and product assessment to take place. A common sequence for presenting the program plan is shown on page 13.

The program plan will contain, if complete, standards of performance by which a staff can measure its degree of success. The program objective column (F) contains the standards of performance to assess learner progress. (A learner can be a student, teacher, or parent depending upon the nature of the

objective.) The major solution procedures or activities column (G) along with the event schedule (H) contain the standards for determining at any time the extent to which the program is operating according to plan. The "activities" section should, therefore, contain enough specific information to determine whether or not each activity was carried out as intended.

Information to Consider Before Planning an Evaluation

A. General Information

1. Time schedule _____
2. Name of program _____
3. Program director _____
4. Primary evaluator _____
5. Principal goal or objective _____
6. Brief description of program; e.g., diagnostic—prescriptive _____

   _____
7. Funding sources _____
8. Level of total funding _____
9. Level of evaluation funding _____

B. Size of Project

1. Approximate number of students per grade:

PK_____	3_____	7_____	11_____
K_____	4_____	8_____	12_____
1_____	5_____	9_____	
2_____	6_____	10_____	

2. Number of schools involved _____
3. Number of specialists and titles involved _____
4. Number of teachers involved _____
5. Number of paraprofessionals involved _____

6. Different student populations for which data might be desired; e.g., standard English-speaking, Spanish-Black dialect, Title I, non-Title I, experimental _____

7. Number of non-instructional project support components to be evaluated; e.g., parent involvement, staff development, etc.

_____

C. Evaluation Concerns and Considerations

1. Extent of past evaluations _____

2. Extent of past decision making resulting from evaluation _____

_____. If extensive, what was the general

nature of these decisions?_____

3. Do program objectives exist? _____

4. Instruments now in use:

a. _____

b. _____

c. _____

d. _____

5. General areas to be covered by evaluation (Check those appropriate)

a. Needs Assessment____ c. Progress evaluation____

b. Program planning____ d. Outcome evaluation____

e. Implementation evaluation____

6. Possible need for instrument development; e.g., parent questionnaire, student attitude, observation checklist, etc.

a. _____

b. _____

c. _____

d. _____

7. Types of decision makers for which evaluation information (interim and outcome) might be needed; e.g., board of education, project director, building principals, classroom teachers, etc.

   a. _____

   b. _____

   c. _____

   d. _____

8. Degree of knowledge that program decision makers have regarding evaluation and projections for staff development in the evaluation process.

9. Possible constraints on the evaluation design.

   a. _____ Limited assistance from district to aid evaluator

   b. _____ Availability of control groups

   c. _____ In-house politics

   d. _____ External involvement (Model Cities, USOE, etc.)

   e. _____ Lack of evaluator expertise or experience

Evaluation Planning Considerations The evaluation plan is generated by the program planning groups, usually at the direction of the evaluator. For each objective, process and performance, the following must be determined:

- Is an experimental design necessary (or desirable) to assess the objective, and, if so, are the expertise and resources available to put theory into practice? The sophistication of analysis is related to the level of decision making required; i.e., the more important the decision, the more exacting the design.

An example follows selected from the field of pupil services which illustrates the process of developing a program plan. This process would be exactly the same for evaluating any area of pupil services.

SAMPLE PROGRAM PLAN

PROGRAM DESCRIPTION

OBSERVATION OF DISCREPANCIES

| | | |

- What instrument(s) will be used?
- If instruments are to be developed, what procedures will be followed to help guarantee quality?
- How will data be collected?
- When will data be collected?
- How much time will be required from those responsible for administering tests, completing forms, etc.?
- What communication network is necessary to keep all informed of the data collection process?
- How will data be processed and analyzed and by whom?
- In what general way will data be reported?
- Considering all of the above, will decisions be able to be made to enhance the quality of the program?

The evaluation plan should be a document succinctly written, yet as complete as possible. For each objective, answers to as many of the above questions as seem practical should be included. A sample format for the evaluation design is shown below.

Product Objective	Steps necessary to measure	Who is responsible	By When	Process objectives to support	Steps necessary to measure	Who's responsible	By When
1.	a. b. c. d.	a. b. c. d.	a. b. c. d.	1.	a. b. c. d.	a. b. c. d.	a. b. c. d.
				2.	a. b. c.	a. b. c.	a. b. c.

2. (Repeat above for each product objective)

CONDUCTING FORMATIVE EVALUATION

Important Considerations The program plan and the description of activities supply the standard for assessing the degree to which a program is operational. Several questions need to be answered in the planning stages of an implementation evaluation before truly useful information can result:

Which Activities will be Assessed?

Select only those activities which have primary importance to the program to avoid a tremendously arduous task. If it becomes necessary to assess the operation of all activities, methods for doing this which minimize staff time must be used.

Who are Primary Information Users?

Information collected and reported in an implementation assessment is primarily for those involved in managing a program. These individuals must be identified.

When Will Implementation Information be Helpful?

Information must be collected and reported at a time when it can affect the operation rather than being collected too late and therefore is a waste of time and money.

What Commitment to Action Exists After Submission of the Formative Report?

An implementation report identifies discrepancies between the program plan and what is happening. When this information is known, the district must commit itself to considering action.

What is Current Receptivity Given to Evaluation by Local Staffs?

To conduct a formative evaluation successfully, all involved staff need to have an appropriate mind set. The attitude must prevail: "Evaluation activity is for program improvement." All involved personnel must be convinced that when discrepancies are found between "what is" and "what should be," positive constructive action can and will result. If staff members are apprehensive of forthcoming judgment, it is best not to waste the time and effort it takes to conduct the evaluation. There is probably no aspect of program evalution that, more than this, requires a sound communication network.

Data Collection

Methods

Two primary methods of data collection are used to assess implementation of a program which is part of the process evaluation.

. survey type instruments
. interviews

Survey instruments are useful where information is supplied by a large number of staff members and where broad areas are covered. Structured interviews have the advantage of being more personalized and yiel[illegible] more in-depth information. A combination of the two is often desirable. Typical questions which are useful guides to constructing survey-type instruments or conducting interviews are listed below. Discrete operations are those scheduled for completion at a given time. Continuous operations are those without a spec fied date for completion.

Typical Questions

Discrete Operations

Occurrence, calendar time, participation:

- Did the operation occur?
- Did the operation occur on time?
- If the operation did not occur on time, did the delay harm the potential effectiveness of the program?
- Did the person responsible for the operation complete it?
- Were participants who were supposed to be involved or recipients of the service or communication involved?
- How long did the operation take?
- Was the written product produced?
- If the written product was not produced, did its absence harm the potential effectiveness of the program?
- Was the operation or product effective?
- If the operation or product was not effective, what prevented that?
- What could be done to improve this type of operation in the future?

Continuous Operations

- On the average, how much time are persons named spending in this operation?
- Why are persons spending a different amount of time than was planned for operation?
- Is the amount of time planned for this operation realistic?

If persons spent less time than was planned:

- Do they feel that they should spend more time on the operation?
- What changes, if any, must occur to insure that the operation is carried out?

If persons spent more time than was planned:

- Do they feel they should reduce the amount of time spent on the operation?
- What changes, if any, must occur to reduce the amount of time spent on the operation by the personnel involved?

Frequency of Occurrence of Operations

- How frequently did the operation occur (for operations with a planned frequency of occurrence)?
- If the operation occurred less frequently than planned, is this harming potential effectiveness of the program?

Participation in Planned Operations

- How many occurrences of an operation were attended, on the average, by named personnel in particular roles?
- If the personnel attended fewer occurrences of an operation than expected, do they feel they should have attended more?

Monitoring Progress

Purpose and Planning

The same concerns must be attended to in monitoring student and program achievements as assessing the process or implementation of a program. The standard for assessing process is the list of activities or procedures presented in the program plan. The standards for monitoring the product are the product objectives. The intent is to discover, at a time when some action can be taken, how well the program is doing toward achieving its outcome or performance objectives. It stands to reason that if these objectives have any practical meaning at all and if a district is committed to achieving them by year end, interim measures need to be taken to determine whether or not the program is on target. Planning involves answering these questions:

- Which of the objectives will be assessed?
- Who are the primary information users?
- What kinds of decisions are capable of being made with regard to program alteration if success is not being achieved?
- When during the year will information be the most timely?
- What commitment to action exists after information is known?

Data Collection

Instruments and data collection techniques in this aspect of formative evaluation are much the same as those used in summative evaluation. It is common to do more sampling for interim assessment than in summative evaluation. This is seen as a highly credible practice.

Monitoring student progress by the way of criterion-referenced tests and checklists are excellent ways to conduct a formative evaluation of a program's product objectives, as well as to provide necessary information for diagnostic/prescriptive interventions. This assumes a close relationship between skill development being measured by a criterion-referenced test and growth that will show up on a standardized achievement test. This correlation should be checked to increase the level of validity of interim decision making based upon these results.

Reporting Results

Reporting results of a formative assessment is an important element in the decision-making process due to the districts' commitment to action, as well as the potentially threatening element of the assessment itself. One of the best ways to present information to decision makers that will not only promote action but also relieve the anxiety about evaluation is to display it in a needs assessment format.

Present a prioritized list of needs to improve program operation, possibly without highlighting why things have failed to occur according to plan. The format for presentation is related to the manner in which the data are collected.

CONDUCTING SUMMATIVE EVALUATION

Summative evaluation answers the question, "How did we do?" in contrast with the formative aspect, which answers, "How are we doing?" The primary focus is on the extent to which product objectives were met, with final process and context assessments supplying support.

Planning the Evaluation

As in all evaluation, effective planning enhances the quality of that activity. A good evaluation plan is well on its way to realizing this potential. To plan adequately, program evaluation requires input from various levels of project staff, primary decision makers, and evaluator. Lack of understanding and communication breakdowns are far more often the causes of problems than the evaluation activity itself.

Prior to the development of the evaluation design, the parameters of a program are first delineated by the program planning group. These provide the context in which the evaluation will be conducted. The topics noted need to be addressed by the group as a whole to initially clarify the evaluation intent.

Instrumentation

Measuring devices should be tied to program objectives—the concrete interpretations of goals stated as precise guides to action. There are many alternative assessment strategies including standardized tests, records maintained for routine reports, and forms constructed by educational managers, evaluators, or practitioners.

Various devices are used to assess the extent to which process and product objectives are attained. The most popular methods include:

- Norm-referenced tests
- Criterion-referenced tests
- checklists and record-keeping forms

- observation forms
- questionnaires
- interviews
- attitude scales

The most important issue for those concerned with selecting or developing instruments measuring objectives is to obtain instruments that are valid for the purpose. This difficulty arises because it is easier to use an instrument already developed than to develop one, and second, because it is not a simple task to develop a quality checklist, questionnaire, and the like.

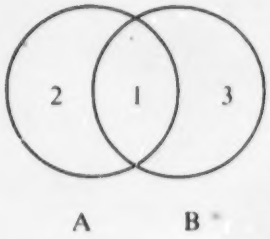
Instruments Already Developed

The most common type is the achievement test usually used to measure the cognitive areas. Instruments measuring various kinds of attitudes and checklists of all sorts also fit this category.

When selecting instruments from this group, it is necessary to identify the extent to which three conditions exist:

- that portion of the instrument which measures aspects of the program;
- that portion of the instrument which does not measure aspects of the program;
- that portion of the program which is not measured by the instrument.

If circle A represents the instrument and circle B the program, the Venn diagram below shows these three conditions:



The larger proportion of the figure covered by 1, the more valid the test. The larger 2 becomes, the less likely the group will perform well (especially when compared to a norm group), and the larger 3 is, the more likely that important parts of the program will remain unmeasured.

When selecting an instrument already in existence, this procedure or one like it must be part of the selection process.

Instruments to be Developed

These usually are the questionnaires, survey forms, checklists, record-keeping devices, which require information on specific parts of a program. To gather good information from instruments of this type requires that the developer have a knowledge of the process. There is simply more to it than asking some questions or making some statements followed by a scale of "strongly agree" to "strongly disagree."

The following checklist may help improve the quality of locally developed forms.

Instrument Review and Quality Check

Suggestions for developing effective evaluation instruments are noted below. Not all suggestions are applicable in every case. It is common for an instrument to go through at least three revision cycles. A check indicates satisfaction.

	Draft 1	Draft 2	Final Draft	Not Applicable
1. Provide a good introduction.	____	____	____	____
2. Use wording that will be perceived in the same way by each respondent.	____	____	____	____
3. Directions must be clear and should be something more specific than "Answer the questions below."	____	____	____	____
4. Formats for responding should be simple and straightforward.	____	____	____	____
5. Keep questions requiring open-ended responses to a minimum.	____	____	____	____
6. Keep response time on questionnaires to a minimum, not more than ten minutes (about five minutes for parents).	____	____	____	____
7. Avoid, as much as possible, items on checklists requiring value judgments.	____	____	____	____
8. Try to provide time to try an instrument out on a few subjects before distribution.	____	____	____	____
9. Always provide time for decision makers to review initial drafts of an instrument. Emphasize a review based upon the decision-making potential.	____	____	____	____
10. Determine how results will be reported BEFORE the instruments are administered.	____	____	____	____
11. Obtain samples of instruments similar to the one being developed. Critique them and take advantage of their good points.	____	____	____	____
12. Seek assistance in locating adequate measurement tools and especially in developing instruments.	____	____	____	____

Data Collection

This area of evaluation often causes problems because of the time required, failure to plan well, lack of communication, anxiety accompanying evaluation activities, or any combination of the above. Yet it is the area that must be successful if the findings are to have any meaning at all. The following sections discuss collection of data in groups, individual completion of forms, and checklist and record-keeping procedures.

Testing or Group Completion of Forms, Questionnaires, etc.

The three groups are:

- those completing the test or form
- those administering them, and
- those responsible for the logistics of the process.

Each contributes significantly to the success or failure of the operation. The evaluator must not assume that all the necessary aspects are simply going to fall into place. A check should be made to see that the following needs are met:

- for sufficient materials to be in the proper places at the proper times.
- for test administrators to have an appropriate mind set for the activity and to pass this on to those completing the test forms.
- for standardized administration procedures to be used, especially in testing.
- for a testing schedule conducive to obtaining the most valid results to be developed.
- for test administrators to know about any special handling of materials that may be necessary to complete data analyses satisfactorily.

Checks of the above are generally made through written communication, but are most significant in sessions where an interchange of ideas, suggested procedures, and timing can be incorporated with an earnest appeal for positive assistance.

Completion of Questionnaires, Survey Forms, Etc., Independently

The most common instance of this form of data collection is the mailed or hand-delivered questionnaire asking for the responses of students, parents or teachers in some aspect of an instructional program. Since it is known that 100 percent of the potential responses will not be collected, the first priority, once instruments are developed, is to establish procedures for obtaining a large percentage of responses. The second is to determine the extent to which the responses obtained fairly represent the views of the total group. The following suggestions are offered for parent or student questionnaires:

- a short instrument.
- an introductory letter from someone of authority emphasizing the importance of completing the form but without biasing the respondent.

- a stamped self-addressed envelope for return (to save money, get a postal permit allowing you to pay only for those returned).
- follow-up postcards or other reminder, sent four or five days after the initial distribution, encouraging a return. (Parent volunteers making follow-up phone calls also are helpful).

To determine degree to which responses are representative of the total group:

- obtain a random sample of non-respondents.
- interview each, probably by telephone, using the exact form that was used for the respondents.
- compare the results from the two groups. If responses are similar, it can be assumed that the responses obtained are a fair representation of the total group. If they are dissimilar, the respondents represent a biased group and results from the two groups must be reported separately.

Checklist and Record-Keeping Procedures

As student diagnostic and prescriptive profiles and parent involvement activities have become commonplace, record-keeping procedures have become more complex. Problems stem from the time required to maintain up-to-date records and the questionable validity of the information obtained. Far too little planning is usually a major contributor to the problem along with a lack of assigned responsibility for maintaining records. Besides suggesting that keeping information this way be held to a minimum, the following is recommended:

- Monitor the process. Little or no information or meaningless information in June does not help.
- Early in the year, conduct a mini-analysis of the data collected in the monitoring phase. See if what is being collected will enable one to assess the objective.
- Try several formats before deciding which is the best data collection form. A good format can save several hours of record-keeping and subsequent tabulation.
- Continually communicate the importance of keeping accurate up-to-date records. Let those responsible know how decision making has been affected at the program level by the information that has come as a result of record-keeping.
- Know ahead of time what is to be done with information once it is collected, how it is to be summarized, and how it is to be reported.
- Do not collect any information that is not needed.

Data Analysis

Several variables impact upon the evaluation design and data analysis procedures usually to the degree that a person specifically versed in "how to" should give direction to the process. The manner in which data are analyzed provides the substance for drawing conclusions about program worth and for contributing (or not) to the decision-making process. These two features are too important to deal with in a superficial way.

Data analysis strategies should be determined when designing the evaluation with the sophistication of these strategies directly related to the level of decision making intended. For example, the data supporting a basic decision to continue or discontinue a program requires a more exacting analysis than that reporting which staff-training technique was best.

The following questions need to be answered for each data source before data analysis techniques can be determined:

- What is the nature of decisions to be made as a result of the information collected?
- What kind of data result from the instruments (e.g., test scores, frequency distributions and percentage counts, scale values, etc.)?
- How many people supplied the information to be analyzed?
- Which variables were controlled in the evaluation design (e.g., textbook used, time of instruction, extent of teacher training), and which were not, yet could be causal factors (e.g., teacher ability, problems with implementation, student characteristics, mobility, etc.)?

The more variables that are purposely observed in an evaluation design, the more complex is the analysis. Yet, at the same time, the evaluator is more confident about the cause of the results.

Educators are generally suspicious of data analysis procedures which they do not fully understand. It behooves one versed in design and analysis techniques to communicate a rationale and procedure at a layman's level to promote their use.

Reporting and Communicating Results

Data have meaning only to the extent that they can be effectively communicated to those outside the evaluation realm. It is important that the evaluator continually bears in mind that people make decisions, data do not. The extent to which data affect decisions is directly related to the degree the decision maker understands those data. This, of course, relates to the manner in which this information is presented.

Because evaluation reports are generally lengthy, especially when there are a large number of objectives, there are not too many people in a district who will read an entire evaluation report; nor should there be. The writer is, therefore, charged with writing to various readers, including:

- The community at large
- The Board of Education
- Superintendent and other high-level administrators
- Central office project staff, and
- School staffs

It is not uncommon, therefore, to report results in such various kinds of documents as:

- An Executive Summary
- A Community Report
- The Formal Final Report

.. The Executive Summary is a two- to three-page document which summarizes the important aspects of the project. The extent of objective attainment and recommendations for the future are included. This will probably be the most widely read document of the three and great care should be exercised in its preparation.

.. The Community Report is an eight- to ten-page report emphasizing student outcomes and parent involvement and attitudes. It uses a variety of graphs and charts to display data and writing that is easily understood. The extent of objective attainment is important to include, as parents are becoming familiar with this concept. Concepts generally perceived as understandable yet often misinterpreted (such as the grade-equivalent unit) are clarified before data are presented. This Report is an excellent public relations tool.

. The Formal Final Report is the base document and reports on all phases of the project. It is desirable to limit its length, but also necessary to address the information needs of each of the kinds of readers. A good sequence for displaying the information is to present an objective followed by the data supporting attainment or non-attainment and finally the conclusion. Summaries are also included and recommendations given. The evaluator must recognize and adhere to the parameters under which recommendations are made. Data display is important in the final report. While the report is not intended to read as a novel, interest is promoted with various kinds of numerical and pictorial displays. The evaluator should accept this as a challenge.

Suggestions Regarding Summative Evaluation Reports

The major product of outcome evaluation is the final report. It is necessary that the report communicate with the reader and not serve simply as the evaluator's platform. Some suggestions that may enable the development of a higher quality, more readable product follow.

. It is a common practice to display relationships among variables. For example, "Those teachers who were more positive toward the program tended to report having had less inservice training than did those with less positive responses." The evaluator must be cautious about inferring a cause/effect relationship.

. Sample sizes should always be reported. Percentages can be grossly misinterpreted if samples are small. Likewise, scores reported for

special programs having just a few people can be highly unreliable. In general, be sure when you look at percentages that you also observe *how many subjects* were used to determine those percentages before drawing conclusions about information presented.

- Change scores (growth scores or difference scores) are commonly used. If used, they should be explained and qualified as they can be dangerously deceptive.
- When reporting raw scores in a table, supply the number of items on the test. Short descriptions of tests, especially those less well known, are highly appropriate. Raw scores or percentages are not meaningful unless a point of departure is known.
- Avoid the use of evaluation and educational jargon. How much meaning does the following statement have for a reader? "The analysis of covariance was used to test the difference of means using post-test scores as the criterion and pre-test scores as the covariate. The alpha level was .05. The reader is cautioned against overinterpreting these results, however, as the requirements for equal slopes and homoscedasticity were not met." Put this kind of information into an appendix of technical information.
- When conclusions are drawn from data presented in the report, the evaluator must consider whether these conclusions fall out in logical sequence and are easily justified. If not, one must accompany a conclusion with a reason for drawing it.
- The evaluator must seriously consider the scope of the recommendations to be made in an evaluation report. Recommendations can be made concerning such things as:
  - Procedural Changes
  - Clarification of Roles
  - Materials Acquisition
  - Testing
  - Staff Development Emphasis, etc.

The report should recognize that the decision makers have that responsibility and that they should not be criticized for not following the report to the letter. There is a big difference between recommending "that the program be expanded" and "that serious consideration be given to expanding the program."

- In order to allow sufficient time to reduce data, appropriately analyze it, and present findings adequately, it is strongly suggested that where possible, certain sections of the report be prepared as much as two to three months in advance. Such sections might include, for example, procedures, evaluation design, description of tests, etc.
- Analysis and reporting formats should be discussed with district decision makers prior to report preparation.

When formative evaluation has been highlighted during the year, a good section to include is a chronology of evaluation activities. This enables the reader to realize how much interaction has occurred between project people and evaluator. Perhaps, more than anything else, this section can cite evaluation as an improvement facilitator.

APPLICATION TO PUPIL PERSONNEL SERVICES

The process model described above has applicability across myriad programs within pupil personnel services. In some instances, the measurement devices would be indirect measures of change. Changes in affective areas are somewhat less amenable to direct measurement than are changes in cognitive areas.

Experience with the process of program and evaluation has demonstrated that it is often easier to deal with measures of efficiency (quantity dimensions) before it is possible to deal with measures of effectiveness (quality dimensions). For example, it is easier to deal with the number of referrals dealt with, the number of counselees seen, the number of home contacts made than the changes which have occurred in the lives the clients.

Nevertheless, ultimately it is essential that both the measures of efficiency and effectiveness be dealt with. More and more states are mandating program evaluation in all components of the educational enterprise, including pupil services. It is the hope of the authors of this Monograph that the process model outlined above will enable personnel involved in pupil services to demonstrate the positive changes that have occurred through their efforts.

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